Against the Grain

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I Hear the Train A Comin'-An Interview with Timo Hannay, Managing Director of Digital Science

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I Hear the Train A Comin' — An Interview with Timo Hannay, Managing Director of Digital Science

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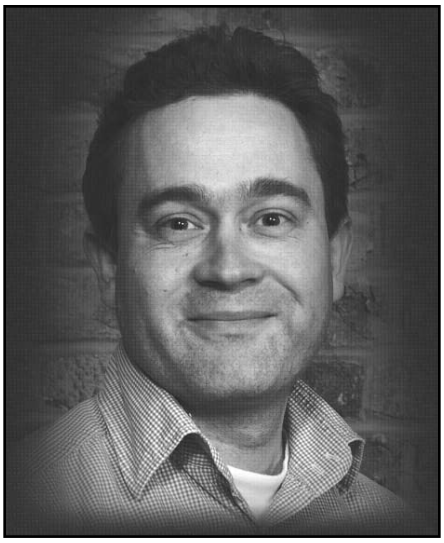
Column Editor's Note: Timo Hannay** is Managing Director of **Digital Science**. He previously worked at its sister organization, **Nature Publishing Group**, where he was director of **nature.com**. Before that he was a research neurophysiologist (in Oxford and Tokyo), journalist (at **The Economist** and **Nature**), and management consultant (at **McKinsey & Co.**). I recently interviewed **Timo** about **Digital Science**, a teaser of sorts for **Timo's** appearance at the **Charleston Conference** this November. — **GT



What is Digital Science?

TH: We're a software company that focuses on meeting the needs of scientists — as well as others who support the research process, such as funders and institutional managers. We elaborate on this on our Website: *http://www.digital-science.com/*. We're also a division of **Macmillan Publishers**. This might seem like a strange place for a software company to grow up, but in fact it makes perfect sense because **Macmillan** (like all publishers) is an information company and has long served the scientific market. So providing information technology for scientists is a natural progression, especially in a digital age. Where **Macmillan** differs from most other publishers, in my opinion, is in having the courage of its convictions. If you look around the industry, it's generally very conservative, and change is both slow and reactive. Fortunately **Macmillan** is very different.

How did it come to be?

TH: I previously worked at **Nature Publishing Group**, the scientific publishing arm of **Macmillan**, where I helped to run the online business. We noticed that, as scientific information became increasingly digital and connected, more and more opportunities arose to serve the information needs of researchers not only by providing them with great content but also by providing them with great software tools. This led to a wide variety of projects involving scientific databases, online social applications, and so on. But it also became increasingly evident to us that long-term success in this field would require the establishment of a separate business dedicated to developing software. This is because technology businesses need different priorities, structures, and cultures to content businesses. So we created a new division called **Digital Science** in 2010 and launched it in December of that year. What started as a tiny team consisting of myself and two others has now grown into a global group of over 100 amazing people.

What is the corporate structure and backing?

TH: Digital Science itself is a division of **Macmillan** and wholly owned and funded by that company. However, we have built the business, in large part, by investing in and working with a variety startup companies. It turns out that, although the large incumbents in this area are rather predictable and slow-moving, there are a lot of great things happening in early-stage companies, mostly set up by former researchers. Rather than trying to repeat what they're already doing, we've chosen to identify the very best and work with them. Our portfolio companies include the creators of 1DegreeBio, Labguru, ReadCube, BioRAFT, and Symplectic Elements. This has given us a wonderful global network of talented and highly-motivated people who share our mission and really understand scientists' needs. I sometimes wish they weren't quite as spread out around the world, but at least we're helping to keep a few airlines in business. ;)

What projects have come out of it to date?

TH: Here's a list of the main ones that we have so far:

- 1DegreeBio (*http://1degreebio.org/*): A Website to help scientists select the best antibodies and other reagents for their research.
- Altmetric (*http://www.altmetric.com/*): A system to follow and measure the online conversations about research papers.
- BioRAFT: A Web-based system for institutions to manage laboratory safety and provide relevant training to research staff.
- Figshare (*http://figshare.com*): An online service for storing, sharing, and citing research data, and giving credit to those who do it.
- Labguru (*http://www.labguru.com/*): A Web-based service for organising and managing research laboratories, from consumables to protocols.
- ReadCube (*http://www.readcube.com/*): An application for organising, retrieving, annotating, and discovering research content.
- SureChem (*https://surechem.com/*): Open chemical patent search with amazing technology for turning text and images into searchable structures.
- Symplectic Elements (*http://www.symplectic.co.uk/*): Automatically keep track of the publications of all researchers in an institution.

There are several more internal projects and external investments, but we're not ready to announce them yet, so I'll stop there.

What are some examples of how Macmillan or others have used some of these Digital Science-developed products/services to better support the research process?

TH: ReadCube is available in a browser-based form on *nature.com*, and you can expect to see it on other journal Websites soon. Labguru provides its users with access to protocols from **Nature Publishing Group** and **Sigma**. Altmetric scores and links are popping up all over the academic Web from **BioMed Central** and **Frontiers** to **Scopus**. SureChem has a collaboration with the **Royal Society of Chemistry** to create an open, linked Web of chemistry information that spans journals, chemical compound databases, and patents. I could go on, but hopefully you get the idea. Even with all this happening, we've only just scratched the surface of what's possible.

How are new ideas identified, developed, released, and managed?

TH: There's no single route to great ideas, or even great execution, so we have a multiplicity of ways. We began **Digital Science** with a carefully considered plan for the areas in which we wanted to be active, driven mainly by our assessment of unmet needs and business models that were ripe for disruption. We then tried to identify who was already doing good things in those areas and investigated the possibility of partnering with them. That led to the investments I've already mentioned, as well as a few other collaborations. Where we felt that there was no one already working to fill a gap, we assembled our own teams and began developing our own products, though this obviously takes longer. Since then, most of the good ideas have come either from within (Altmetric and Figshare were both creations of **Digital Science** colleagues) or from external connections (for example, recipients of our Catalyst Grants: *http://www.catalystgrant.org/*).

Before taking any idea forward we ask ourselves some very basic questions: Will this

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product or service genuinely help scientists? Are we a good organisation to provide it? Is it likely to become economically self-sustaining? And does it bring something valuable to our other existing projects? If the answers to all those questions are yes, and if we can assemble the right people to take it forward, then we'll give it a go. We tend to work in small project-oriented teams, whether within the central **Digital Science** team or at one of our portfolio companies. These teams are quite autonomous, but there's also central support in areas like management, business development, marketing, and technology. We also encourage and enable collaborations between projects where we see mutual benefits.

Why is a different approach to innovation needed in the scientific community?

TH: I'm not sure that it is. We don't need a different approach to innovation than happens elsewhere (e.g., in consumer markets), but we do need innovation, and there's been far too little of that in the area of information services for science. The Web was created just over 20 years ago for the specific purpose of enabling scientists to share information with each other, yet today consumer and business activities dominate. Scientists have better tools for managing their music and photo collections than they do for managing the information they use in their professional lives. It's not hard to understand why — science is a much smaller market than, say, games or office productivity — but it's still a problem and Digital Science exists to address it.

How did you personally get involved with Digital Science?

TH: I was working at **Nature Publishing Group** helping to run the online business and was part of the team that cooked up the idea of **Digital Science**. **Annette Thomas**, **Macmillan's** CEO, then asked me to run it. After considering this deeply for about a millisecond, I said yes.

What has surprised you most about the development of new ideas within the scientific realm?

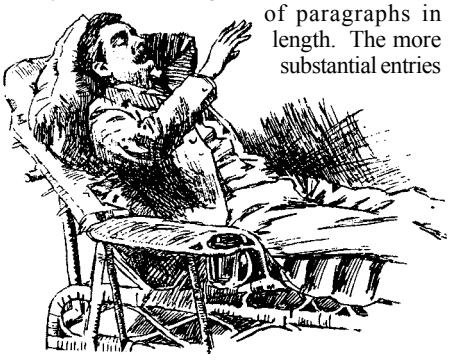
TH: I'm continually surprised by how long it takes for new technologies and working practices to be adopted. But, frankly, I shouldn't be surprised by this anymore, so I guess it's really an indication of my own impatience. To look on the bright side, this means that there are still huge opportunities to make science more productive, as well as more fulfilling for those who practice it. The evolution of technology as applied to science is still in the Cambrian Era, and as a technology geek who used to be a scientist, I can't think of anything more important or fulfilling to work on.

From the Reference Desk

by **Tom Gilson** (Associate Editor, *Against the Grain*, and Head of Reference Emeritus, College of Charleston, Charleston, SC 29401) <gilsont@cofc.edu>

Most reference librarians will recognize the pedigree of this recent addition to **Oxford University Press'** catalog. The ***Benezit Dictionary of British Graphic Artists and Illustrators*** (2012, 978-0199923052, $295) is a subset drawn from the first English edition (2006) of the *Benezit Dictionary of Artists,* a classic title in the reference literature first published in French in three volumes between 1911 and 1923.

Admittedly, this two-volume subset does more than provide a specialist's focus on British graphic artists and illustrators. It updates the origin by including 90 revised entries as well as 60 new articles above and beyond those found in the full *Benezit Dictionary of Artists.* Overall, there are some 3,000 entries covering "printmakers, poster artists, illustrators, cartoonists, calligraphers, and illuminators either native to or active in the United Kingdom from the Middle Ages to the present." Following the established template of the *Benezit Dictionary,* the entries in this set provide biographical sketches informed by the available information, so the entries vary in length and structure. All have the name, gender, time the artist was active, and the medium(s) they worked in, followed by a narrative — some barely a sentence long while others a number of paragraphs in length. The more substantial entries will also provide birth and death dates and list exhibitions, museum and collection holdings, auction records, and bibliographies. In a small number of cases, the entry is illustrated with artist signatures and stamps of sale.



The ***Benezit Dictionary of British Graphic Artists and Illustrators*** is a smartly re-packaged subset of a classic attuned to the needs and interests of specialists. Depending on demand, libraries already owning the 2006 English edition of the *Benezit Dictionary of Artists* may or may not feel the need for this in their reference collection. However, given the specific concentration on British artists, it may be a viable addition to some circulating collections. Serious students and scholars may also wish a copy for their own shelves. The two-volume set is nicely bound, handy, and full of relevant and authoritative information.

(The parent publication, *The Benezit Dictionary of Artists* is available electronically via **Oxford Art Online**, which also allows simultaneous searching of *Grove Art Online*, the *Encyclopedia of Aesthetics*, *The Oxford Companion to Western Art*, and *The Concise Oxford Dictionary of Art Terms*. According to the Website, **Oxford Art Online** is updated three times a year.)

The ***Encyclopedia of Cyber Behavior*** (2012, 978-1466603158, $1495) is a three-volume set recently published by **IGI Global**. Edited by **Zheng Yan** of the **University of Albany**. This reference attempts to provide a defining foundation as well as scholarly clarity to this "emerged" field of study that concentrates on the place where human behavior and cyberspace meet.

The world of cyber behavior is a complex place that draws on multiple disciplines to make sense of what is being observed about the nature of human-cyberspace interaction. Editor **Zheng Yan** and the more than 200 scholars that contribute to this effort are informed by disciplines ranging from sociology to technology and from business and health to communications and law. The set does not employ an alphabetical arrangement but rather is organized into ten sections in a kind of hierarchical structure. The first section builds some foundations by discussing the work of pioneer scholar **Sherry Turkle**, the field of social network studies, and the influence of efforts like the Pew Research Center Internet and American Life Project, NetLab, and the Children's Digital Media Center. The focus then switches to three "key components" of cyber behavior including cyber technologies like chatrooms, wikis, and smartphones; cyber populations ranging from digital natives and the net generation to seniors; and cyber interactions like multi-tasking; online collaboration, and cyber cafes and the youth development. The next five sections discuss cyber behavior as manifest in specific fields like business, medicine, law, government, and education. This coverage results in articles on topics as diverse as e-auctions, Internet addiction, cyber bullying, Internet fraud, Twitter and political elections, cyber warfare, and e-learning behaviors in middle school. While many of these chapters seem informed by cyber behavior in the U.S., the final section looks at cyber behavior in Europe and Latin America as well as China, India, Japan, Canada, and Russia. Surprisingly, there was no chapter on cyber behavior in the Middle East.

Each chapter is structured in a similar fashion starting with an abstract, an introduction defining the topic, an intellectual history along

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